

101 826929

CJC

Practitioner's Docket No. 57657

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Number: 7,244,435 B2

Issued: 07/17/2007

Name of Patentee: Lai

Title of Invention: "DNA VACCINE EXPRESSING HA1 OF EQUINE-2 INFLUENZA"

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**ATTENTION: Decision and Certificate of Correction**  
**Branch of the Patent Issue Division**

**REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT**  
**FOR PTO MISTAKE (37 C.F.R. § 1.322(a))**

1. It is noted that the errors appear in this patent of a clerical nature or character, as more fully described below. A certificate of correction is requested.
2. Attached hereto, in duplicate, is Form PTO/SB/44, with at least one copy being suitable for printing.
3. The errors occur in the patent:
  - Column 16, line 66 the word "Eruend's" should be --Freund's--
  - Column 17, line 8 the word "equip" should be --equid--
  - 
  - Column 17, line 16 the word "eukaxyotic" should be --eukaryotic--
  - Column 18, line 1 the word "meted" should be --method--
  - Column 18, line 14 the word "grain" should be --gram--

**Certificate**  
**AUG 09 2007**  
**of Correction**

AUG 9 2007

It appears that the errors are due to PTO printing mistakes. The correct wording is shown in the amendment mailed November 29, 2006 and allowed by the Examiner in the Notice of Allowance dated March 13, 2007.

4. Please send the Certificate to:


R. Alan Weeks  
Fellers, Snider, Blankenship, Bailey & Tippens, P.C.  
321 S. Boston Ave., Suite 800  
Tulsa, OK 74103-3318

5. It is believed that no fee is due for this Certificate of Correction. If, however, a fee is determined to be due, please charge the fee to Deposit Account 06-0540.

A duplicate of this request is attached.

Respectfully submitted,

Date: 8/3/07

  
R. Alan Weeks  
Fellers, Snider, Blankenship, Bailey &  
Tippens, P.C.  
321 South Boston, Ste. 800  
Tulsa, OK 74103-3318

#410868 v1

AUG 9 2007

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**Page 1 of 1

PATENT NO.: 7,244,435 B2

APPLICATION NO.: 10/826,929

ISSUE DATE: 07/17/2007

INVENTOR(S): Lai

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- Column 16, line 66 the word "Eruend's" should be --Freund's--
- Column 17, line 8 the word "equip" should be --equid--
- 
- Column 17, line 16 the word "eukaxyotic" should be --eukaryotic--
- Column 18, line 1 the word "meted" should be --method--
- Column 18, line 14 the word "grain" should be --gram--

**MAILING ADDRESS OF SENDER(Please do not use customer number below):**

R. Alan Weeks  
Fellers Snider, et al.  
321 South Boston, Ste. 800  
Tulsa, OK 74103

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application for to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*  
#410869 v1

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**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**Page 1 of 1

PATENT NO.: 7,244,435 B2

APPLICATION NO.: 10/826,929

ISSUE DATE: 07/17/2007

INVENTOR(S): Lai

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- Column 16, line 66 the word "Eruend's" should be --Freund's--
- Column 17, line 8 the word "equip" should be --equid--
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- Column 17, line 16 the word "eukaxyotic" should be --eukaryotic--
- Column 18, line 1 the word "meted" should be --method--
- Column 18, line 14 the word "grain" should be --gram--

**MAILING ADDRESS OF SENDER(Please do not use customer number below):**

R. Alan Weeks

Fellers Snider, et al.

321 South Boston, Ste. 800

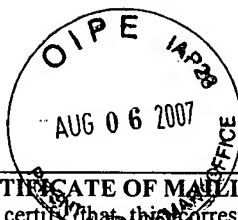
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This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application for to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

#410869 v1

AUG 9 2007



**CERTIFICATE OF MAILING UNDER 37 CFR 1.8**  
I hereby certify that this correspondence and any document referred to as being attached thereto is being transmitted via facsimile to Examiner Salvoza M. Franco in Art Unit 1648 in the U.S. Patent Office at fax number 571-273-8300, on November 29, 2006.

Stacy E. Jenkins  
(Name of person sending paper)

*Stacy Jenkins*  
(Signature)

PATENT  
Application No. 10/826,929  
Attorney Docket No.: 57657/04-265  
Amendment  
Page 1 of 11

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: Alexander LAI  
Serial No.: 10/826,929  
Filed: 04/16/2004  
Confirmation No.: 1334  
Title: DNA Vaccine Expressing HA1 of Equine-2 Influenza Virus  
Group Art Unit: 1648  
Examiner: Salvoza, M. Franco

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDMENT

Dear Sirs:

*Introductory Comments*

This paper is filed in response to the Office Action mailed June 29, 2006. Additionally, please consider this to constitute a Petition for Extension of Time for two months. **Please charge the Extension of Time fee to the credit card for Applicants' attorneys of record. PTO Form 2038 is attached in duplicate.** If any additional fee is required by virtue of the filing of this paper, please also consider this a general authorization to charge Deposit Account No. 06-0540 for the same.

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**Amendments to the Claims** are indicated by the notation "currently amended" in the listing of claims beginning on page 3 of this paper.

There are no **Amendments to the Specification or Drawings**

**Remarks** begin on page 7 of this paper.

*Amendments to the Claims*

The following is a complete listing of all claims in the application, with an indication of the status of each; this listing of claims will replace all prior versions, and listing, of claims in the application.

**Listing of claims:**

1. (Currently amended) A vaccine for equine influenza virus, comprising:  
  
an effective immunizing amount of an isolated DNA, the isolated comprising sequences that encode at least a fragment of an HA1 protein from which HA2 is absent, the sequences being from a strain of equine-2 influenza virus; and  
  
a pharmacologically acceptable carrier or diluent.
2. (Previously presented) The vaccine according to claim 1, wherein the strain of equine-2 influenza virus is selected from the group consisting of A/Eq/Kentucky/98, A/Eq/Miami/63, A/Eq/Kentucky/81, A/Eq/Fontainebleau/79, A/Eq/Kentucky/94, A/Eq/Newmarket/2/93, A/Eq/New York/99, and A/Eq/Oklahoma/2000.
3. (Previously presented) The vaccine according to claim 1, wherein the strain is A/Eq/Kentucky/98.

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4. (Previously presented) The vaccine according to claim 1, wherein the sequences that encode an HA1 protein from which HA2 is absent comprise the nucleotide sequence of SEQ ID NO: 1.
5. (Original) The vaccine according to claim 1, further comprising one or more of the group consisting of additional antigenic components, encoding sequences for additional antigenic components, and other vaccines.
6. (Previously presented) The vaccine according to claim 1, further comprising a vector containing the sequences that encode an HA1 protein from which HA2 is absent.
7. (Original) The vaccine according to claim 6, wherein the vector is a eukaryotic expression vector.
8. (Original) The vaccine according to claim 7, wherein the vector is selected from the group consisting of pcDNA3.1/V5-His-TOPO and pVAX1.
9. (Original) The vaccine according to claim 1, further comprising an adjuvant.

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10. (Original) The vaccine according to claim 9, wherein the adjuvant is selected from the group consisting of complete Freund's adjuvant, incomplete Freund's adjuvant, saponin, mineral gels, surface active substances, pluronic polyols, polyanions, peptides, oil or hydrocarbon emulsions, keyhole limpet hemocyanins, and dinitrophenol.

11. (Canceled).

12. (Previously presented) The vaccine according to claim 1, further comprising a liposome into which the sequences that encode an HA1 protein from which HA2 is absent is encapsulated.

13. (Original) A method of inducing an immune response against equine influenza virus, comprising administering to an equid an effective immunizing amount of the vaccine of claim 1.

14. (Previously presented) The method according to claim 13, further comprising the steps of inserting the sequences that encode an HA1 protein from which HA2 is absent into a vector and delivering the vaccine intranasally into the respiratory tract.

15. (Original) The method according to claim 14, wherein the vector is a eukaryotic vector.

16. (Original) The method according to claim 15, wherein the vector is selected from the group consisting of pcDNA3.1/V5-His-TOPO and pVAX1.

17. (Previously presented) The method according to claim 15, wherein the vector is a liposome.

18. (Original) The method according to claim 13, wherein the vaccine is administered at a dosage of at least 0.01 .mu.g DNA per gram of body weight.

19. (Original) The method according to claim 13, wherein the vaccine is administered at a dosage falling within the range of 0.001 µg DNA per kilogram of body weight to 0.01 µg DNA per gram of body weight.

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### REMARKS

Claims 1-10 and 12-19 are currently pending in the application. By this amendment, claim 1 is amended. The foregoing separate sheets marked as "Listing of Claims" show all the claims in the application, with an indication of the current status of each.

#### **Claim Rejections: 35 USC § 112, second paragraph**

Claims 1-10 and 12-19 stand rejected under 35 USC § 112, second paragraph, as indefinite. This rejection has been addressed by the amendment of claim 1, which applicant submits resolves any potential ambiguities therein.

#### **Claim Rejections: 35 USC § 103**

The Examiner has rejected of claims 1, 2, 3, 4, 6, and 7 under 35 USC § 103(a) as obvious over Olsen et al. (hereafter "Olsen") in view of Lai et al. (hereinafter "Lai"). This rejection is traversed.

Initially, the references do not combine to teach all of the claimed elements. The Examiner has noted that the specification defines HA1 as "comprising SEQ ID NO: 1," and interpreted this as meaning that HA1 includes SEQ ID NO: 1, and possibly more. The Examiner then contends that that Lai teaches that "L39914 [is] a fragment or portion of SEQ ID NO: 1." From this the Examiner reaches the conclusion that claim element of "an HA1 protein from which HA2 is absent," is satisfied. Applicant respectfully points out that nothing the Examiner

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has shown provides a teaching of, “an HA1 protein from which HA2 is absent.” As the Examiner points out, the word “comprising” is an open form. In the present case however, claim 1 was previously amended to explicitly exclude HA2. Therefore “an HA1 protein from which HA2 is absent,” would need to actually be shown in the prior art, rather than relying on language from the specification to infer this limitation from references that do not teach it.

Secondly, even if the references did combine to teach all of the claim elements, there is no motivation to combine these references. The MPEP at §2143.01 states that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” On page 5 of the current Office Action, the Examiner states that “Lai et al teaches that the sequences are from equine-2 influenza virus, and ultimately for use in vaccines.” Applicant submits that there is no support for this statement in Lai.

The only mention of HA1 sequences in Lai is in the context comparing different equine-2 influenza viruses with one another in order to generate a phylogenetic tree. Claim 1 is directed to a vaccine for equine influenza comprising isolated DNA sequences that encode HA1 protein from which HA2 is absent. There is no suggestion in Lai that an HA1 sequence, in the absence of HA2, could or should be used as DNA in a vaccine. Furthermore, there is no indication that there would be a reasonable expectation of success if the HA1 sequence were so used. The only reference to vaccines in Lai is to the use of whole viruses.

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Therefore, it is clear that no motivation may be found in the references themselves for the combination of Lai and Olsen. Further, as shown, even when combined, the references do not teach all elements of claim 1. For these reasons, the rejection of claim 1 should be withdrawn.

Claims 2-10 and 12-19 depend from and further limit claim 1. Thus, for at least the reasons above, these claims should be allowable over the cited art as well.

### **Conclusion**

In view of the foregoing, it is requested that the application be reconsidered, that claims 1-10 and 12-19 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 918-599-0621 (fax: 918-583-9659; email: [aweeks@fellerssnider.com](mailto:aweeks@fellerssnider.com)) to discuss any other changes deemed necessary in a telephonic or personal interview.

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A request and payment for a two-month extension of time accompanies this paper. If any additional fees are required, please charge any deficiencies in fees to Attorney's Deposit Account No. 06-0540. Please credit any overpayment of fees to the same account.

Respectfully submitted,



SIGNATURE OF PRACTITIONER

November 29, 2006  
**DATE**

Reg. No.: 36,050

Tel. No.: (918) 599-0621

Customer No.: 22206

R. Alan Weeks

321 S. Boston Ave., Suite 800

Tulsa, OK 74103-3318

W #382568 v1

AUG 9 2007



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
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## NOTICE OF ALLOWANCE AND FEE(S) DUE

22206

7590

03/13/2007

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BAILEY & TIPPENS  
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TULSA, OK 74103-3318

DOCKET RECEIVED  
ATTORNEY:

MAR 16 2007

ACTION DUE: 6/13/2007  
SET UP:

EXAMINER

SALVOZA, M FRANCO G

ART UNIT

PAPER NUMBER

1648

DATE MAILED: 03/13/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,929

04/16/2004

Alexander Lai

57657/04-265

1334

TITLE OF INVENTION: DNA VACCINE EXPRESSING HA1 OF EQUINE-2 INFLUENZA VIRUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	06/13/2007

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

### HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
 or **Fax** **(571)-273-2885**

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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence, including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or indicated otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22206 7590 03/13/2007

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 TULSA, OK 74103-3318

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,929

04/16/2004

Alexander Lai

57657/04-265

1334

TITLE OF INVENTION: DNA VACCINE EXPRESSING HAI OF EQUINE-2 INFLUENZA VIRUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional

NO

\$1400

\$300

\$0

\$1700

06/13/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
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SALVOZA, M FRANCO G

1648

424-210100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 \_\_\_\_\_  
 2 \_\_\_\_\_  
 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee☐ Publication Fee (No small entity discount permitted)☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date **AUG 9 2007**

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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AUG 06 2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,929	04/16/2004	Alexander Lai	57657/04-265	1334

EXAMINER
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SALVOZA, M FRANCO G

ART UNIT	PAPER NUMBER
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1648

DATE MAILED: 03/13/2007

22206 7590 03/13/2007  
FELLERS SNIDER BLANKENSHIP  
BAILEY & TIPPENS  
THE KENNEDY BUILDING  
321 SOUTH BOSTON SUITE 800  
TULSA, OK 74103-3318

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
(application filed on or after May 29, 2000)

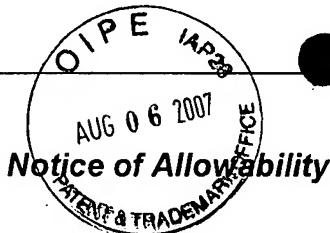
The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

AUG 9 2007



Application No.

10/826,929

Examiner

M. Franco Salvoza

Applicant(s)

LAI, ALEXANDER

Art Unit

1648

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's reply filed 11/29/06.
2. ☒ The allowed claim(s) is/are 1-10 and 12-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 02/16/07
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

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### DETAILED ACTION

Claims 1-10, 12-19 are pending and under consideration.

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with R. Alan Weeks on February 16 and 19, 2007.

1. (Currently amended) A vaccine for equine influenza virus, comprising:  
an effective immunizing amount of an isolated DNA, the isolated DNA comprising sequences that encode at least a fragment of an HA1 protein, wherein DNA encoding from which HA2 is absent, the sequences being from a strain of equine-2 influenza virus; and a pharmacologically acceptable carrier or diluent.

4. (Currently amended) The vaccine according to claim 1, wherein the sequences that ~~encode an HA1 protein from which HA2 is absent~~ that encode at least a fragment of an HA1 protein, wherein DNA encoding HA2 is absent, comprise the nucleotide sequence of  
SEQ ID NO: 1.

6. (Previously presented) The vaccine according to claim 1, further comprising a vector

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containing the sequences ~~that encode an HA1 protein from which HA2 is absent~~ that encode at least a fragment of an HA1 protein, wherein DNA encoding HA2 is absent.

12. (Previously presented) The vaccine according to claim 1, further comprising a liposome into which the sequences ~~that encode an HA1 protein from which HA2 is absent~~ that encode at least a fragment of an HA1 protein, wherein DNA encoding HA2 is absent is encapsulated.

14. (Previously presented) The method according to claim 13, further comprising the steps of inserting the sequences ~~that encode an HA1 protein from which HA2 is absent~~ that encode at least a fragment of an HA1 protein, wherein DNA encoding HA2 is absent into a vector and delivering the vaccine intranasally into the respiratory tract.

18. (Currently amended) The method according to claim 13, wherein the vaccine is administered at a dosage of at least 0.01 ~~mg~~ µg DNA per gram of body weight.

### *Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Franco Salvoza whose telephone number is (571) 272-8410. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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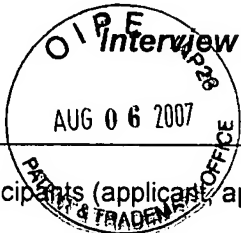
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
M. Franco Salvoza  
Patent Examiner



BRUCE R. CAMPELL, PH.D  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600

AUG 9 2007



Application No.

10/826,929

Applicant(s)

LAI, ALEXANDER

Examiner

M. Franco Salvoza

Art Unit

1648

All participants (applicant, applicant's representative, PTO personnel):

(1) M. Franco Salvoza.

(3) \_\_\_\_\_

(2) R. Alan Weeks.

(4) \_\_\_\_\_

Date of Interview: 16 February 2007.Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: \_\_\_\_\_

Claim(s) discussed: 1.

Identification of prior art discussed: \_\_\_\_\_

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Proposed amendments to the claim were discussed.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

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Examiner Note: You must sign this form unless it is an  
Attachment to a signed Office action.\_\_\_\_\_  
Examiner's signature, if required